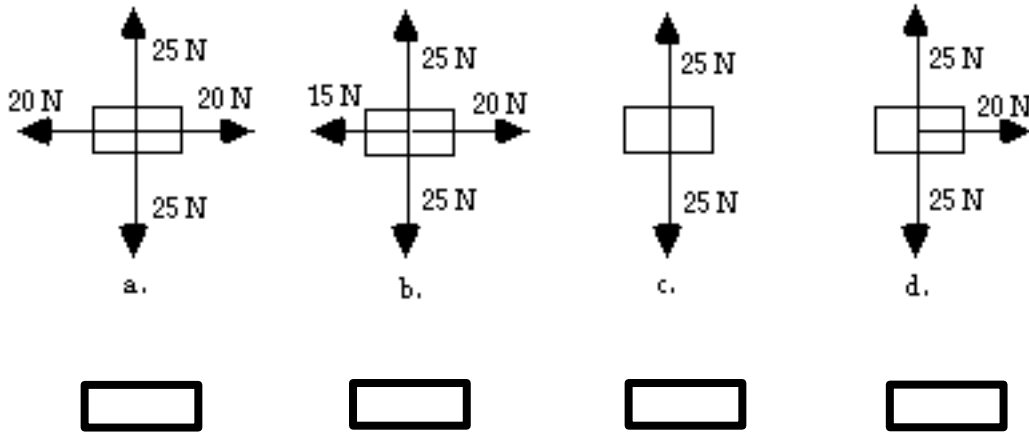
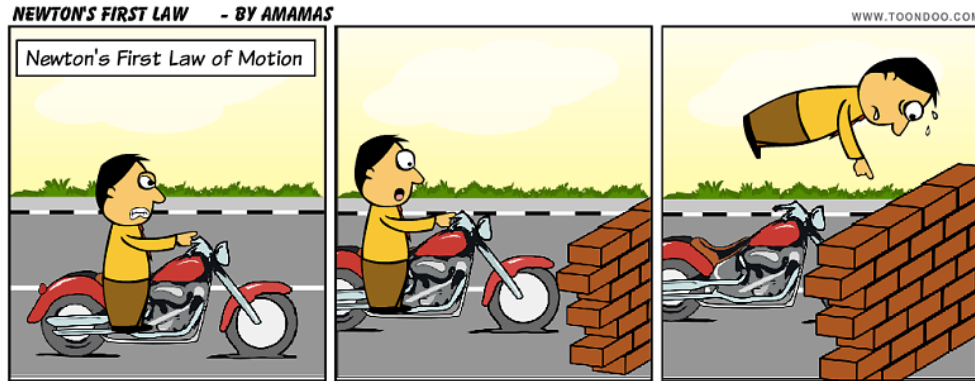


Forces and Newton's 3 laws of motion TEST REVIEW (TEST #3 REVIEW)



1. Find the net force for each of the objects above and draw the force diagram showing only the net force on the empty box below.
2. Draw a **circle** around the objects that have **balanced forces** and a square around the objects that have unbalanced forces.
3. If an object has no forces acting on it or the forces acting on the object are balanced, what can you say about the motion of the object?
4. If an object has forces acting on it that are unbalanced, or there is a net force that is not zero, what can you say about the motion of the object?
5. Which of the objects above would then experience no change in motion?
6. Which of the objects above would experience a change in motion or acceleration?
7. Define mass:
8. Define inertia:
9. Define force:



10. Assuming the motorcycle is in motion in the first image at a rate of 14 m/s, briefly discuss what is happening in the third image above. Be sure to include the resulting motion of both the motorcycle and the rider and use terms such as net force, and inertia.



11. Using Newton's first law of motion, explain why it is possible for Donkey and Diddy Kong to make it to the other track without jumping at all.

12. Give an explanation for why the cart moves down to the lower track and does not just continue moving in the forward direction at the same level as the upper track.



14. In line with Newton's 3rd law of motion, if there was an action force of King Koopa pushing Mario, what would the reaction force be?
15. What would be true about the size of the force on Mario in comparison to the size of the force on King Koopa?
16. In line with Newton's 2nd law of motion, which of the two players would experience a greater acceleration?
17. How much force is needed to make a 150 kg object accelerate at a rate of 1 m/s²?
18. What is the acceleration of a 14 kg object that is pushed forward with a force of 25 N and the force of friction opposing the objects motion is 4 N?
19. What is the mass of an object that is accelerating at a rate of 31 m/s² if the net force acting on the object 186 N?
20. How much does a 50 kg person weigh if the acceleration due to gravity is 10 m/s²?
21. What is the mass of a car that weighs 140,000 N on earth?
22. What is the acceleration of a 150 kg object when 1,500 N is applied?
23. What is an action-reaction force pair? Do these forces act on the same object or different objects?

24. In the picture below draw and label 2 action reaction force pairs



25. If the force on the bat is equal to the force on the ball, which of the two objects will experience a greater acceleration?

26. In the picture below draw and label 1 action reaction force pair.



27. Define Friction:

Match the following types of friction with the correct situations:

28.	static	a	a special type of frictional force that acts upon objects as they travel through the air. Air resistance is often so small it is not considered, it is dependent on the shape and size of an object
29.	rolling	b	results when the surfaces of two objects are at rest relative to one another and a force exists on one of the objects to set it into motion relative to the other object.
30.	fluid (liquid)	c	results when an object slides across a surface.
31.	sliding	d	rolling friction refers to the resistance created by an object rolling across a surface (ex: wheel, ball, tire)
32.	air resistance	e	similar to air resistance but has a higher impact because the particles in a liquid are closer together and create a larger "drag" on an object